

REMARKS

Amendments to the Claims

Claims 1, 3-8 are under examination with entry of the present Amendment. Claims 1 and 8 have been amended as set out below.

Claim 1 has been amended to recite that the conduit provides for gas communication between the dessicant cartridge and the interior volume of the spacing member, that the cartridge is replaceable, and that air passing into the interior volume of the spacing member first passes through the cartridge.

Claim 2 has been amended to include the limitation that the dessicant concealing member and cartridge are positioned adjacent the inner pane of glass.

Claim 8 has been amended to correct the phrase "than a first desiccant material," in accordance with the Examiner's recommendation.

No new matter has been added with the amendments made herein. Support for the amended claims is found throughout the application and in the as-filed claims. Applicant believes that the amended claims better define the invention in a manner supported by the original application, and in a manner so as to render moot the rejections as set out below.

Rejections under 35 U.S.C. §103

The Office Action rejects claims 1-7 as allegedly unpatentable over Stoneback (U.S. Patent No. 2,276,112) in view of Shinagawa (U.S. Patent No. 4,658,553). The Office Action states that:

Regarding claim 1, Stoneback in Figures 4-6 discloses a heat insulation window comprising an inner pane (13) and an outer pane (11) defining an air space (14) therebetween and a frame (10) surrounding a perimeter of the window, wherein the frame comprises at least one desiccant concealing member (30) which is hollow and detachable from the frame; a desiccant cartridge (20) removably disposed within the desiccant concealing member and

conduit means (22) for providing gas communication between the air space and the desiccant cartridge; wherein the desiccant concealing member and the desiccant cartridge are positioned adjacent to the inner pane (13), such that the inner pane (13) is between the airspace, and the desiccant concealing member (30) and the desiccant cartridge (20).

Applicant respectfully traverses this rejection. It is respectfully submitted that a *prima facie* case of obviousness has not been made.

Applicant's claimed energy efficient window has a dual desiccant system comprising a spacing member (e.g. item 16 of the specification) positioned between the glass panes (e.g. items 10, 12), and a desiccant concealing member (26) which is removable from the window frame. The spacing member (e.g. item 16) is hollow and filled with desiccant. The spacing member defines openings to allow air to circulate within the air space between the panes and the interior of the spacing member containing the desiccant. A conduit connects the spacing member's interior to a replaceable desiccant cartridge which is filled with desiccant and positioned within the desiccant concealing member.

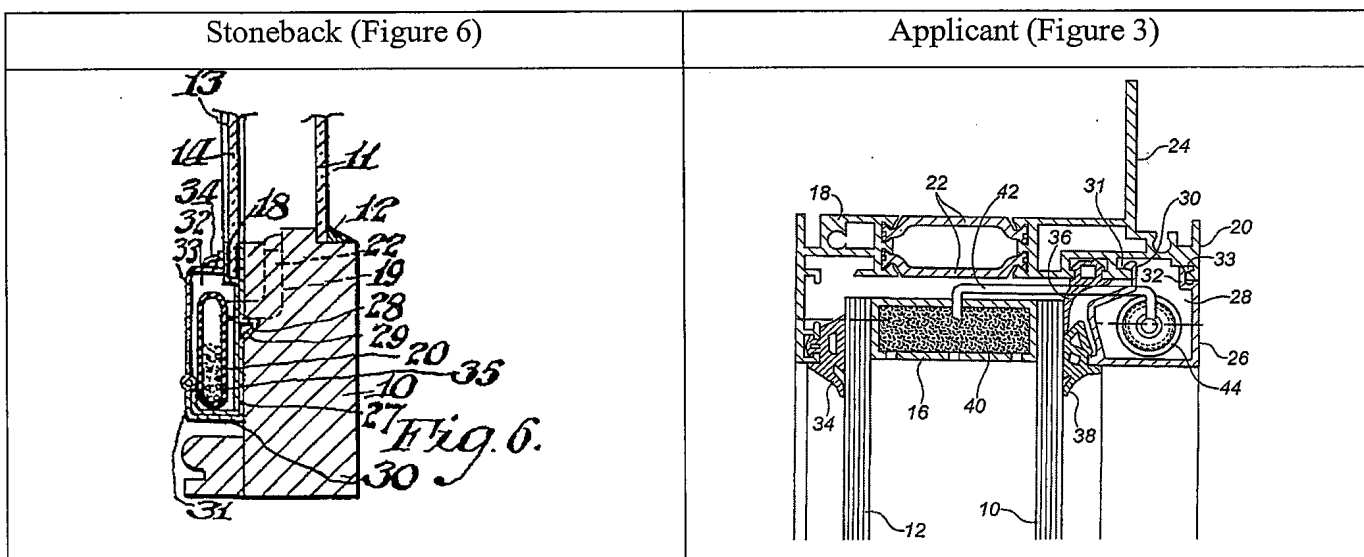
A dual desiccant system advantageously ensures that window condensation is minimized, hence preventing potential damage or rotting of the window's components and saturation of the wall insulation. Moisture between the glass panes is absorbed by both the desiccant within the spacing member and the desiccant within the tube. The desiccant within the spacing member is unlikely to become saturated due to the gas communication provided between the spacing member's interior and the desiccant tube. As well, when the tube desiccant is replaced, the likelihood of the spacing member desiccant becoming saturated is further reduced. Thus, the window does not need to be dismantled to replace the spacing member or desiccant within the spacing member.

One skilled in the art will readily recognize that the desiccant cartridges provide an expansion vent connected to the hollow spacing members, and thereby the interior volume between the inner and outer panes of glass. Air that expands out of the window, passes through the spacing member, and through the desiccant cartridge. If the air in the window contracts, the air drawn in will have come

through the dessicant cartridge and will pass through the spacing member. As stated in the specification at pg.5, lines 14-17:

As will be appreciated by those skilled in the art, air which is drawn into the air space must pass through the replaceable dessicant tube, thereby preserving the the dry atmosphere within the window unit.

Applicant's claimed invention does not constitute a predictable use of prior art elements. Stoneback does not disclose or suggest a dual desiccant system, as recited in Applicant's claims. For clarity, the window of both Stoneback (left panel) and Applicant (right panel) are compared below:



Stoneback describes a window glass insulation frame including an “expansible and contractible” receptacle (20) containing a dehydrating agent (35) and enclosed in one of two different housings, as shown in Figures 2 and 6. Both embodiments require a hinged door or cover which is normally retained in a closed position, but can be forced open by pressure if the receptacle expands beyond the confines of the housing. Stoneback describes the interior of the receptacle as being

...made of latex having the ends sealed... and in communication with the dead air space by one or more nipples 22 projecting through and

completely filling the passageways 19 and the upper end of one of said nipples may be at a higher level than the other in order to ensure a circulation of air from the dead air space through the receptacle 20 as occasion requires (page 2, first col., lines 1-7).

An attempt to ensure that air circulates from the dead air space to the receptacle has been made by making "the upper end of one of the nipples at a higher level than the other."

Stoneback does not recognize the advantages to be gained by providing a dual desiccant system which breathes through a replaceable dessicant cartridge. In the present invention, as the air volume expands in the claimed invention, it passes through the dessicant in the spacing member, and is then in contact with the second dessicant in the dessicant cartridge, before it passes out to the atmosphere. Air drawn in must pass through the dessicant cartridge. Stoneback is a sealed system, where expandibility is accomodated by using a flexibile resilient material for the receptacle, such as latex rubber.

Furthermore, Stoneback does not teach the desirability of a replaceable dessicant cartridge. The replaceability of the present invention ensures that the dessicant, both within the cartridge and within the spacing member, will not become saturated and ineffective.

Although Stoneback has been selected as the primary reference upon which all claim rejections have been based, the Office Action admits that the following element or limitation, which is recited in the claims, is not taught by Stoneback:

- a spacing member disposed between the inner and outer panes which maintain the panes in a spaced-apart relationship, the spacing member being hollow and defining opening permitting gas communication between the air space and the interior volume of the spacing member; and a desiccant material contained within the spacing member.

The Office Action alleges that Shinagawa compensates for the deficiency of Stoneback:

Shinagawa in Figures 7 and 9 discloses an insulated window comprising a transparent spacing member (17) along edges of two glass panes, the spacing member disposed between

the inner and outer panes which maintain the panes in a spaced-apart relationship, the spacing member being hollow and defining openings (172a) permitting gas communication between the air space and the interior volume of the spacing member; and a desiccant material (15) contained within the spacing member to maintain the space between two glass panes without obstructing the view through the window.

It would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify the structure of Stoneback to have a spacing member. . . as taught by Shinagawa to provide reinforcing and maintained spacing between the two glass panes. Per the modification, the inner pane would be the spacing member, which is placed between the inner and outer panes, and the desiccant concealing member and desiccant cartridge.

With respect, Applicant disagrees. The addition of Shinagawa does not remedy the deficiency relative to Stoneback. Shinigawa does disclose a spacing member with an enclosed dessicant. However, one skilled in the art reviewing Shinigawa and Stoneback would understand that the two prior art documents provide alternative placements of the dessicant material. One skilled in the art would not be led to the conclusion that the two alternative placements could be combined to provide to provide a dual dessicant system. The inventive concept of the present invention is the use of two separate dessicants in series. There is no motivation or suggestion in either Stoneback or Shinigawa to provide a dual dessicant system.

Shinigawa also fails to teach a replaceable dessicant system, which is a claimed element in the present invention. Shinigawa teaches a completely sealed unit.

There is no reasonable expectation of success or operability from combining Stoneback with Shinagawa to arrive at the present invention. Shinigawa envisions a completely sealed unit, not permitting air to escape to or be drawn from outside of the seal which surrounds the perimeter of the spacing member. There is no provision in Shinigawa to allow for the expansion or contraction of the air volume within the unit. Therefore, Shinigawa and Stoneback are contradictory on this issue. Stoneback does allow air circulation but only into and out of a sealed latex rubber receptacle. The present invention uses a dual dessicant system which allows significant air volume to expand out of the window, or into the window. Accordingly, the combination of Stoneback and Shinigawa does

not teach all the claimed elements of claim 1, as amended.

Applicant respectfully traverses the remaining rejection as summarized below. Such a rejection is simply based on impermissible hindsight reconstruction using Applicant's disclosure as a blueprint, which cannot satisfy the requirements for sustaining this rejection under 35 U.S.C. §103.

The Office Action rejects claim 8 as allegedly unpatentable over Stoneback in view of Shinagawa as applied to claim 1, and further in view of Reid, Jr. *et al.* (United States Patent No. 3,151,951). The Office Action states that:

Stoneback already modified by Shinagawa discloses the structure above, and further discloses that a second desiccant material (35) is contained within the desiccant cartridge. Stoneback modified by Shinagawa does not disclose that the second desiccant material has a higher affinity for water than the desiccant material within the spacing member. Reid, Jr. *et al.* discloses that desiccants with varying affinity for water have been known and used in the art (col. 1, lines 20-21).

It would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to have the second desiccant material in the cartridge to have a different and higher affinity for water than the desiccant material within the spacing member because Reid, Jr. *et al.* has taught that using desiccant materials of varying affinities for water were known and within the ordinary skill in the art. Because the cartridge is more accessible than the spacer, the desiccant in the cartridge can have a higher affinity for water because it can be easily replaced.

Applicant respectfully traverses this rejection. Reid, Jr. *et al.* is cited simply for its teachings related to desiccants having varying affinities for water, but does not overcome the deficiencies of the Stoneback or Shinagawa references with respect to independent claim 1. Accordingly, Applicant submits that claim 8 is patentably distinguishable for at least the same reasons as discussed above with respect to claim 1, upon which it depends. Reconsideration and withdrawal of this rejection are requested.

Applicant submits that it is improper to reject any of these claims under 35 U.S.C. §103. Applicant has established that the claimed invention is not a predictable use of prior art elements. The prior art

does not teach or suggest Applicant's claimed invention, indicating that there is no reason for one skilled in the art having common sense to make the asserted combination. A *prime facie* case of obviousness has not been established.

In summary, claims 1-8 are not anticipated or rendered obvious in view of the cited prior art since the references do not teach or suggest the features of the invention as claimed. Reconsideration and withdrawal of all claim rejections under 35 U.S.C. §103 are thus respectfully requested.

CONCLUSION

In view of the foregoing remarks and amendments, it is submitted that this application is in condition for allowance and allowance thereof is respectfully requested.

Respectfully submitted,

Alan H. Winfield

By: 

Edward Yoo (Reg. No. 41,435)

CORRESPONDENCE ADDRESS CUSTOMER NO. 22828